SANSUI

SERVICE MANUAL

RZ-1500

COMPUTERIZED STEREO RECEIVER

NOTICE
For servicing RZ-1500, please refer to service manual for the RZ-1000 with this manual, since most of the parts and circuits employed in RZ-1500 are in common with the RZ-1000.
On the parts list, the changed parts are specified by "●" mark on top of the Stock No.

CAUTION
1. Parts identified by the ⚠ symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

•SPECIFICATIONS

Audio section

Power output
Min. RMS, both channels driven, from 40 to 20,000 Hz with no more than 0.09% total harmonic distortion
32 watts per channel into 8 ohms
DIN
38 watts per channel into 8 ohms.
Total harmonic distortion less than 0.09% at or below rated min. RMS power output
Load impedance ..... 4 ~ 16 ohms
Input sensitivity and impedance (1 kHz)
PHONO ..... 2.5 mV/47 kohms
CD ..... 200 mV/47 kohms
TAPE PLAY ..... 150 mV/47 kohms
Frequency response (at 1 watt)
..... 10 to 70,000 Hz, +1 dB, −3 dB
Signal to noise ratio (short-circuit, A-network)
PHONO ..... 73 dB
CD, TAPE PLAY ..... 90 dB
Controls
BASS ..... ±8 dB at 50 Hz
TREBLE ..... ±7 dB at 10 kHz
LOUDNESS ..... +10 dB at 50 Hz
..... +6 dB at 10 kHz
(VOLUME: −30 dB position)

FM section

Tuning range ..... 88 to 108 MHz
Usable sensitivity
Mono IHF ..... 13.2 dBf (2.5 μV: T-100)
50 dB quieting sensitivity
Stereo ..... 40 dBf
Signal to noise ratio (at 65 dBf)
Stereo ..... 70 dB
Distortion (at 65 dBf)
Stereo ..... less than 0.3% at 1,000 Hz
Stereo separation ..... 40 dB at 1,000 Hz

AM section

Tuning range ..... 530 to 1,600 kHz
Usable sensitivity (Loop antenna)
..... 55 dB/m (562 μV/m)
Signal to noise ratio ..... 40 dB

Others

Power requirements ..... 120/220/240V 50/60 Hz
For U.S.A. and Canada 120V (60 Hz)
Power consumption ..... 180 watts 220 VA Rated
280 watts Maximum
Dimensions ..... 430 mm (16-15/16") W
125 mm (4-15/16") H
335 mm (13-1/4") D
Weight ..... 6.6 kg (14.6 lbs) net
7.9 kg (17.4 lbs) packed

- Design and specifications subject to changes without notice for improvements.
- Due to local laws and regulations, this unit sold in some areas is not equipped with variable voltage selector.

IOTICE

Some printed circuit boards are not supplied assembled.
To separate these in this service manual, the stock numbers are not indicated for these boards. However, stock numbers for individual parts are indicated.

The symbols, EU and EG on the parts list and the schematic diagram mean followings respectively.
EU..... Manufactured for European market.
EG..... Manufactured for F.R.Germany market.
NON MARK.... Common Parts.

Since some capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors and resistors, which was issued on June 1987.

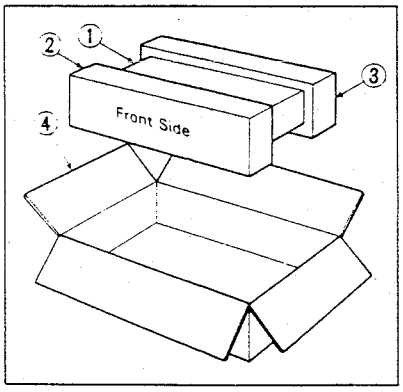
4. Abbreviations in this parts list are as follows.

Abbreviations List

C.R.	: Carbon Resistor	E.B.L.	: Low Leak Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor	Ta.C.	: Tantalum Capacitor
Ce.R.	: Cement Resistor	F.C.	: Film Capacitor
M.R.	: Metal Film Resistor	M.P.	: Metalized Paper Capacitor
F.R.	: Fusing Resistor	P.C.	: Polystyrene Capacitor
N.I.R.	: Non-Inflammable Resistor	M.M.C.	: Metalized Mylar Capacitor
A.R.	: Array Resistor	A.C.	: Array Capacitor
C.C.	: Ceramic Capacitor	V.R.	: Variable Resistor
C.T.	: Ceramic Capacitor, Temperature Compensation	S.V.R.	: Semi Variable AResistor
E.C.	: Electrolytic Capacitor	SW.	: Switch
E.L.	: Low Leak Electrolytic Capacitor	Chip R.	: Chip Resistor
E.B.	: Bi-Polar Electrolytic Capacitor	Chip C.	: Chip Capacitor

1. PACKING LIST

arts No.	Stock No.	Description
1	47859600	Vinyl Bag
2	84582400	Styrofoam Packing F (Front-side)
3	84584600	Styrofoam Packing R (Rear-side)
4	• 84648500	Carton Case



2. ACCESSORY LIST

Stock No.	Description
83041000	AM Loop Antenna
48489800	Antenna Plug
46051700	FM Antenna
• 84606600	AM Antenna Holder
• 84458200	Operating Instruction (*E•F•S)
• 84458300	Operating Instruction (*G•I•Sw)

***Note:**
E•F•S: English•French and Spanish Version
G•I•Sw: German•Italian and Swedish Version

4. PARTS LIST OF BOARD

4-1. F-6001 Main Board <Stock No.01118305=EU / 01118308=EG>

Parts No.		Stock No.	Description
dZ1		49316600	FM Frontend Pack
•Transistor			
dQ1		46834300	DTC144ES
dQ2		46393201	2SC2786
dQ3		46540801	2SC2878
	or	46604301	2SC3327
dQ4~7		46834300	DTC144ES
dQ8		46834200	DTA144ES
dQ9		46367101	2SC2603
	or	48058801	2SC1740S
dQ10,11		46834300	DTC144ES
•IC			
dIC1		48715100	LA1266
dIC2		48491000	LA3410A
dX01		83000200	Quartz Element
•Diode			
dD1~10		46464100	1SS133
dC4~8		48426900	22000pF 25V C.C.
dC9		48103300	0.68µF 50V E.B.
dC11		48662600	100pF 50V C.C.
dC12,13		48102400	4.7µF 25V E.B.
dC18		48663100	270pF 50V C.C.
dC27	•	48662600	100pF 50V C.C.
dC30	•	48426900	22000pF 25V C.C.
dCF1,2		48064800	Ceramic Filter SFE10.7MS3GH
dL1		83043200	Inductor 100µH
dLP1	•	83030101	Low Pass Filter (EG)
dT1		83005900	FM IF Coil
dT2		83006000	FM IF Coil
dT3	•	48791700	CH Filter (EG)
⚠ dR9		46227800	10Ω 1/2W N.I.R.
⚠ dR19		46228200	22Ω 1/2W N.I.R.
dVR1		83007600	200kΩ S.V.R., FM Stereo Sep. Adj.
dVR2		83007600	200kΩ S.V.R., Muting Level Adj.
•Transistor			
eQ1,2		46367001	2SA1115
	or	48058601	2SA933S
eQ3		46367101	2SC2603
	or	48058801	2SC1740S
•FET			
eFT2		46643501	2SK163-K2
	or	46643502	2SK163-L1
	or	46643601	2SK117-Y
	or	46643602	2SK117-GR
•Diode			
eD1		46146300	KV1236Z2 (Variable Capacitance)
eD2,3		46464100	1SS133
eC10~12		48426900	22000pF 25V C.C.
eC16		48426900	22000pF 25V C.C.
eC17		48666200	0.01µF 50V C.C.
eC20,21		48426900	22000pF 25V C.C.
eC23		48663800	1000pF 50V C.C.

Parts No.		Stock No.	Description
eC24		48103500	2.2µF 50V E.B.
eTC1,2		46095700	30pF Trimmer Capacitor
	or	46162900	30pF Trimmer Capacitor
eCF1		48865700	BFCFL-450 Ceramic Filter
eL1		83020300	39µH Coil
eT1		48528900	AM ANT Coil
eT2		83005700	AM OSC Coil
eT3		83013400	AM IF Coil
eVR1		83007500	100kΩ S.V.R., AM Auto Stop Level Adj.
•IC			
fIC1		49317500	LC7218
fXO1		83004400	Quartz Element
•Diode			
fTC1		46095700	30pF Trimmer Capacitor
	or	46162900	30pF Trimmer Capacitor
fL1		83042600	10µH Inductor
•IC			
iIC1		46078900	M5218L
iC2		48663000	220pF 50V C.C.
iC100	•	48662600	100pF 50V C.C.
•Transistor			
kQ7		03067401	2SC1845
⚠ kQ12		48577901	2SC3853
⚠ kQ13		48577801	2SA1489
kC34	•	48426900	22000pF 25V
⚠ kR34,35		46542200	0.2Ω 2W Ce.R.
kL2,3	•	83020100	0.82µH Inductor
•Transistor			
lQ1		48863701	2SC2857
	or	48863901	2SC1473
lQ2		46367001	2SA1115
	or	48058601	2SA933S
•Diode			
lD1	•	46464100	1SS133
•Zener Diode			
lDZ2		48551900	MTZ4.7CT-77
⚠ lF1		83049000	Fuse 4A
•Transistor			
⚠ mQ1		48581701	2SD438
⚠ mQ2		03083901	2SD313HP
mQ3		46367101	2SC2603
	or	48058801	2SC1740S
⚠ mQ4,5		48064001	2SA1284
•Diode			
mD1~4		83049400	1N4003
mD5		83002100	KBU4D
•Zener Diode			
mDZ1		48552900	MTZ6.8AT-77
mDZ2		48555300	MTZ13CT-77

<F-6001>

Parts No.		Stock No.	Description
mDZ3		48555100	MTZ13AT-77
mDZ4		48552100	MTZ5.1BT-77
	or	48552200	MTZ5.1CT-77
mDZ5		48558000	MTZ30BT-77
	or	48558100	MTZ30CT-77
⚠ mR1		46249700	220Ω 1/2W N.I.R.
⚠ mR4		46623700	33Ω 2W N.I.R.
⚠ mR100		46227400	4.7Ω 1/2W N.I.R.
⚠ mR101		46227800	10Ω 1/2W N.I.R.
mC8,9	•	49350500	5600μF 50V E.C.
mC10,11	•	08680400	0.01μF 500V C.C.
•Transistor			
oQ1		46540801	2SC2878
	or	46604301	2SC3327
oQ2		46367101	2SC2603
	or	48058801	2SC1740S
oQ3		46834200	DTA144ES
oQ21		48229400	DTA114TS
•IC			
oIC1		49312200	TC9163N
oIC2		46147700	M5218L
•Diode			
oDZ21	•	48554300	MTZ10C
oC1		48660200	47pF 50V C.C. (EU)
	•	48662600	100pF 50V C.C. (EG)
oC2		48659400	22pF 50V C.C. (EU)
	•	48663000	220pF 50V C.C. (EG)
oC3		48660200	47pF 50V C.C. (EU)
	•	48662600	100pF 50V C.C. (EG)
oC4		48659400	22pF 50V C.C. (EU)
	•	48662600	100pF 50V C.C. (EG)
oC5		48663000	220pF 50V C.C. (EU)
	•	48662600	100pF 50V C.C. (EG)
⚠ pF1		83024000	Fuse 3.15A
		49320400	2P Antenna Terminal
		48528400	2P Pin Jack Terminal, PHONO
		48528300	6P Pin Jack Terminal, TAPE1/CD
		48528200	4P Pin Jack Terminal, TAPE2
		48987400	2P Pin Jack Terminal, VCR/VDP
		46947500	8P Speaker Terminal

4-2. F-6002 SPEAKER IMPEDANCE Switch Board

Parts No.		Stock No.	Description
oS32		49338500	Side SW., SPEAKER IMPEDANCE
⚠ pF3		83023500	Fuse 3A (ES)
⚠ pS2	•	07204700	Voltage Selector

4-3. F-6003 Tuner Control and Operating Switch Board <Stock No.01118605>

Parts No.		Stock No.	Description
•Diode			
oD1~11		46464100	1SS133
oS1	•	83049900	Push SW., 1 (Preset)

<F-6003>

Parts No.		Stock No.	Description
oS2	•	83049900	Push SW., 2 (Preset)
oS3	•	83049900	Push SW., 3 (Preset)
oS4	•	83049900	Push SW., 4 (Preset)
oS5	•	83049900	Push SW., 5 (Preset)
oS6	•	83049900	Push SW., 6 (Preset)
oS7	•	83049900	Push SW., 7 (Preset)
oS8	•	83049900	Push SW., 8 (Preset)
oS9	•	83049900	Push SW., 9 (Preset)
oS10	•	83049900	Push SW., 0 (Preset)
oS11	•	83049900	Push SW., ∧ (TUNING)
oS12	•	83049900	Push SW., ∨ (TUNING)
oS13	•	83049900	Push SW., CHARACTER
oS14	•	83049900	Push SW., CLEAR
oS15	•	83049900	Push SW., MONO
oS16	•	83049900	Push SW., ENTER
oS17	•	83049900	Push SW., F DIRECT
oS18	•	83049900	Push SW., P SCAN
oS19	•	83049900	Push SW., BAND
oS20	•	83049900	Push SW., AUTO
oS23	•	83049900	Push SW., PHONO
oS24	•	83049900	Push SW., CD
oS25	•	83049900	Push SW., TUNER
oS26	•	83049900	Push SW., TAPE-1
oS27	•	83049900	Push SW., TAPE-2
oS28	•	83049900	Push SW., VCR/VDP
•Transistor			
sQ1~3	•	46367101	2SC2603
sQ4~6		46719900	DTC124ES
sQ7		46367101	2SC2603
	or	48058801	2SC1740S
sQ9		46834300	DTC144ES
•IC			
sIC1	•	49346400	TMP47C870N-4612
sXO1		48241600	Ceramic OSC Element
•Diode			
sD1~5		46464100	1SS133
sFL1		49317100	FL. Display Tube CP3023
sR10,11	•	49346300	10kΩ × 7 A.R.
sC4	•	48388400	4700μF 6.3V E.C.

4-4. F-6004 Speakers Switch Board

Parts No.		Stock No.	Description
kL1		83020100	Inductor
⚠ kR39,40		46227800	10Ω 1/2W N.I.R.
⚠ kR41		46229400	220Ω 1W N.I.R.
oS31		83045900	Push SW., SPEAKERS
		46579600	Jack, PHONES

4-5. F-6006 Master and Tone Control Volume Board

Parts No.		Stock No.	Description
•IC			
jIC1		46673800	M5218P
jC4		48660200	47pF 50V C.C.
jC9		48663400	470pF 50V C.C.
jC17	•	48663000	220pF 50V C.C.

to be continued

<F-6006>

Parts No.	Stock No.	Description
⚠ jR21	46229000	100Ω 1/2W N.I.R.
jVR1 •	83046600	150kΩ (B) × 2 V.R., Masteer
jVR2	83013000	250kΩ V.R., BALANCE
jVR3	83012800	50kΩ (C) V.R., TREBLE
jVR4	83012800	50kΩ (C) V.R., BASS
jS1	83046700	Push SW., LOUDNESS

4-6. F-6007 Power Amp. Board

<Stock No. 01119005>

Parts No.	Stock No.	Description
•Transistor		
kQ1	46367001	2SA1115
or	46392001	2SA1175
kQ2	48577701	2SA1349
kQ3,4	46728301	2SC2705
or	48113001	2SC2229
kQ5	03064001	2SC1904
or	46128101	2SC2911
kQ6	03007901	2SA899
or	46128001	2SA1209
kQ8	48061801	2SC3244
kQ9	48064001	2SA1284
kQ10	48061801	2SC3244
kQ11	48064001	2SA1284
⚠ kR11	46230200	1kΩ 1/2W N.I.R.
⚠ kR12	46229200	150Ω 1/2W N.I.R.
⚠ kR16	46230200	5.6kΩ 1/2W N.I.R.
⚠ kR19	46228500	39Ω 1/2W N.I.R.
⚠ kR20	46229200	150Ω 1/2W N.I.R.
⚠ kR21	46230200	1kΩ 1/2W N.I.R.
⚠ kR23,24	46228400	33Ω 1/2W N.I.R.
⚠ kR29	46230200	1kΩ 1/2W N.I.R.
⚠ kR30	46229100	120Ω 1/2W N.I.R.
⚠ kR32,33	46227400	4.7Ω 1/2W N.I.R.
•Diode		
kD1	46464100	1SS133
kVR1	48078600	1kΩ S.V.R., Bias Current Adj.

5. OTHER PARTS

Parts List <Front View>

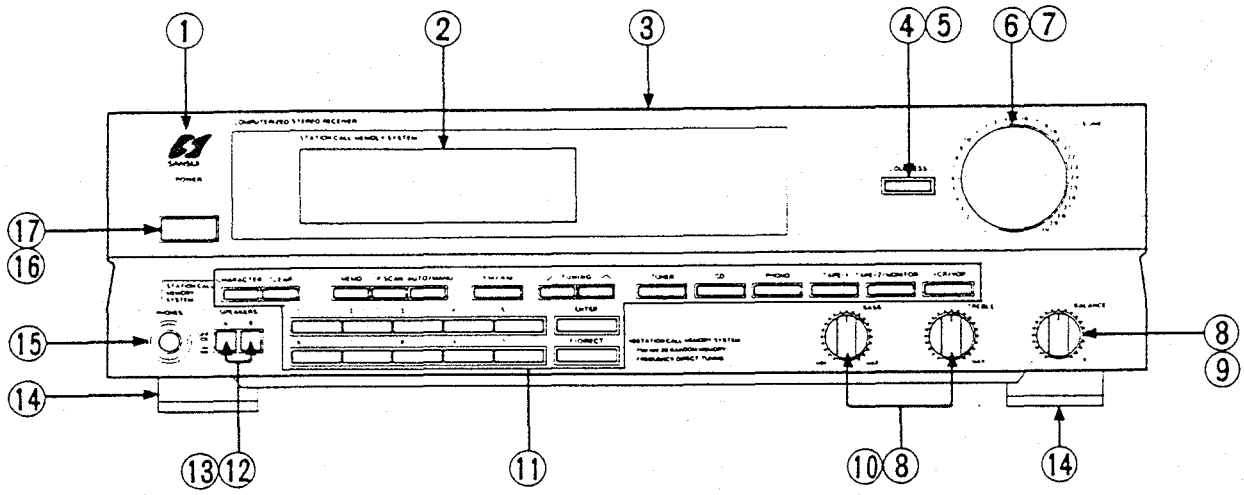
Parts No.	Stock No.	Description
1	• 84601200	Front Panel Ass'y
2	49317100	CP-3023 FL Display Tube
3	• 84578510	Bonnet
4	84580300	Push Knob, LOUDNESS
5	83046700	Push SW.,LOUDNESS
6	84586900	Knob, MASTER
7	• 83046600	150kΩ (B) × 2V.R., MASTER
8	84580100	Knob, BALANCE• TREBLE•BASS
9	83013000	250kΩ V.R., BALANCE
10	83012800	50kΩ (C) × 2 V.R., TREBLE•BASS
11	• 83049900	Push SW., Operation
12	84580000	Push Knob, SPEAKERS
13	83045900	Push SW., SPEAKERS
14	• 84586400	Leg
15	46579600	Jack, PHONES
16	84579700	Knob, POWER
⚠ 17	83049200	Push SW., POWER

Parts List <Top View>

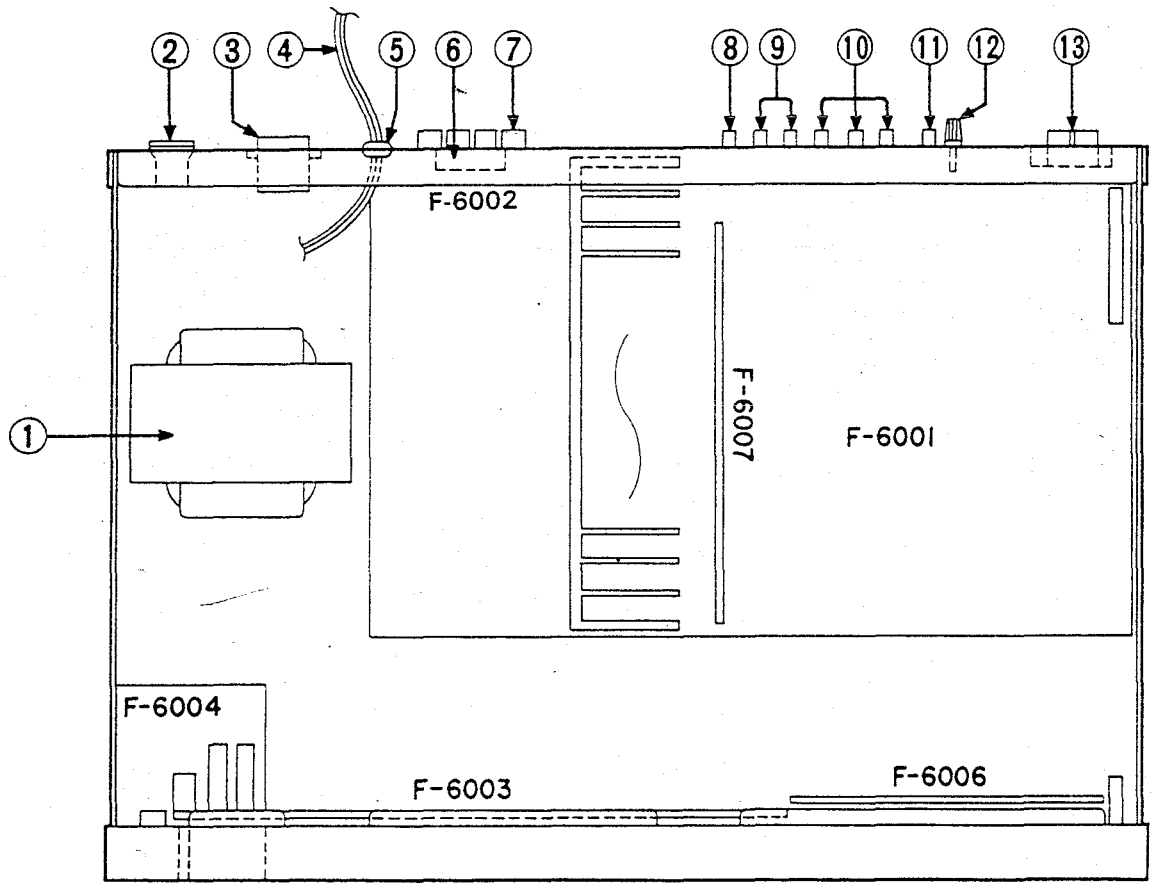
Parts No.	Stock No.	Description
⚠ 1	83046505	Power Transformer
⚠ 2	83002500	AC Outlet
⚠ 3	07204700	Slide SW., Voltage Selector
⚠ 4	83000600	Power Supply Cord
5	48913500	Strain Relief
⚠ 6	49543000	Slide SW., SPEAKER IMPEDANCE SELECTOR
7	46947500	8P Speaker Terminal
8	48987400	2P Pin Jack Terminal, VCR/VDP
9	48528200	4P Pin Jack Terminal, TAPE-2
10	48528300	6P Pin Jack Terminal, TAPE-1•CD
11	48528400	2P Pin Jack Terminal, PHONO
12	84528300	Ground Terminal
13	49320400	2P Antenna Terminal

1500

• **Front View**



• **Top View**



SANSUI

SANSUI ELECTRIC CO., LTD.: New River Building, 10-14, Shinkawa 1-chome, Chuo-ku Tokyo 104, Japan
PHONE: (03)5566-1024 FAX: (03)5566-1027 (International Division)
SANSUI USA INC.: 1250 Valley Brook Ave, Lyndhurst, N.J. 07071 U.S.A.
17150 South Margay Ave. Carson, California 90746 U.S.A.
SANSUI DEUTSCHLAND GMBH: Paul Ehrlich Strasse 8, 6074 Rödermark 2, West Germany

山水電気株式会社 東京都中央区新川1-10-14 (〒104)

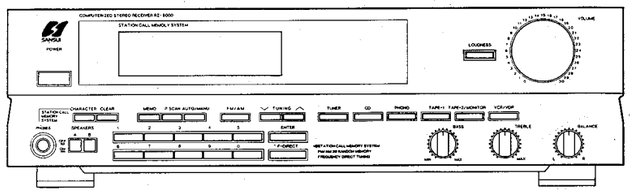
(SM2-205) Printed in Japan (1990.10.P) <Stock No.36554600>

SANSUI

SERVICE MANUAL

RZ-1000

COMPUTERIZED
STEREO RECEIVER



CAUTION

1. Parts identified by the ⚠ symbol on the schematic diagram and the parts list are critical for safety.
   Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

•SPECIFICATIONS

Audio section

Power output
Min. RMS, both channels driven, from 40 to 20,000 Hz with no more than 0.09% total harmonic distortion
32 watts per channel into 8 ohms
DIN
38 watts per channel into 8 ohms.
Total harmonic distortion less than 0.09% at or below rated min. RMS power output
Load impedance..... 4~16 ohms
Input sensitivity and impedance (1 kHz)
PHONO..... 2.5 mV/47 kohms
CD..... 200 mV/47 kohms
TAPE PLAY..... 150 mV/47 kohms
Frequency response (at 1 watt)
..... 10 to 70,000 Hz, +1 dB, −3 dB
Signal to noise ratio (short-circuit, A-network)
PHONO..... 73 dB
CD, TAPE PLAY..... 90 dB
Controls
BASS..... ±8 dB at 50 Hz
TREBLE..... ±7 dB at 10 kHz
LOUDNESS..... +10 dB at 50 Hz
..... +6 dB at 10 kHz
(VOLUME: −30 dB position)

FM section

Tuning range..... 88 to 108 MHz
Usable sensitivity
Mono IHF..... 13.2 dBf (2.5 μV: T-100)
50 dB quieting sensitivity
Stereo..... 40 dBf
Signal to noise ratio (at 65 dBf)
Stereo..... 70 dB
Distortion (at 65 dBf)
Stereo..... less than 0.3% at 1,000 Hz
Stereo separation..... 40 dB at 1,000 Hz

AM section

Tuning range..... 530 to 1,600 kHz
Usable sensitivity (Loop antenna)
..... 55 dB/m (562 μV/m)
Signal to noise ratio..... 40 dB

Others

Power requirements..... 120/220/240V 50/60 Hz
For U.S.A. and Canada 120V (60 Hz)
Power consumption..... 180 watts 220 VA Rated 280 watts Maximum
Dimensions..... 430 mm (16-15/16″) W
125 mm (4-15/16″) H
335 mm (13-1/4″) D
Weight..... 6.6 kg (14.6 lbs) net
7.9 kg (17.4 lbs) packed

* **Design and specifications subject to changes without notice for improvements.**
* **Due to local laws and regulations, this unit sold in some areas is not equipped with variable voltage selector.**

NOTICE

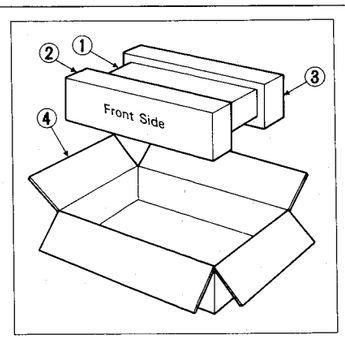
1. The symbols, UL, CSA, EU, EG, ES, SS and XX <EXPORT> on the parts list and the schematic diagram mean followings respectively.
   UL..... Manufactured for U.S.A market. (Underwriters Laboratories approved model.)
   CSA..... Manufactured for Canadian market.
   EU..... Manufactured for European market.
   EG..... Manufactured for F.R. Germany market.
   ES..... Manufactured for Swiss market.
   SS..... Manufactured for Saudi Arabia market.
   XX..... Standard Version.
   <EXPORT>
   NON MARK..... Common Parts.
2. Some printed circuit boards are not supplied assembled. To separate these in this service manual, the stock numbers are not indicated for these boards. However, stock numbers for individual parts are indicated.
3. Since some capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors and resistors, which was issued on June 1987.
4. Abbreviations in this service manual are as follows.

•Abbreviations List

C.R.	: Carbon Resistor
S.R.	: Solid Resistor
Ce.R.	: Cement Resistor
M.R.	: Metal Film Resistor
F.R.	: Fusing Resistor
N.I.R.	: Non-Inflammable Resistor
A.R.	: Array Resistor
C.C.	: Ceramic Capacitor
C.T.	: Ceramic Capacitor, Temperature Compensation
E.C.	: Electrolytic Capacitor
E.L.	: Low Leak Electrolytic Capacitor
E.B.	: Bi-Polar Electrolytic Capacitor
E.B.L.	: Low Leak Bi-Polar Electrolytic Capacitor
Ta.C.	: Tantalum Capacitor
F.C.	: Film Capacitor
M.P.	: Metalized Paper Capacitor
P.C.	: Polystyrene Capacitor
M.M.C.	: Metalized Mylar Capacitor
A.C.	: Array Capacitor
V.R.	: Variable Resistor
S.V.R.	: Semi Variable Resistor
SW.	: Switch
Chip R.	: Chip Resistor
Chip C.	: Chip Capacitor

1. PACKING LIST

Parts No.	Stock No.	Description
1	47859600	Vinyl Bag
2	84582400	Styrofoam Packing F (Front-side)
3	84584600	Styrofoam Packing R (Rear-side)
4	84582200	Carton Case

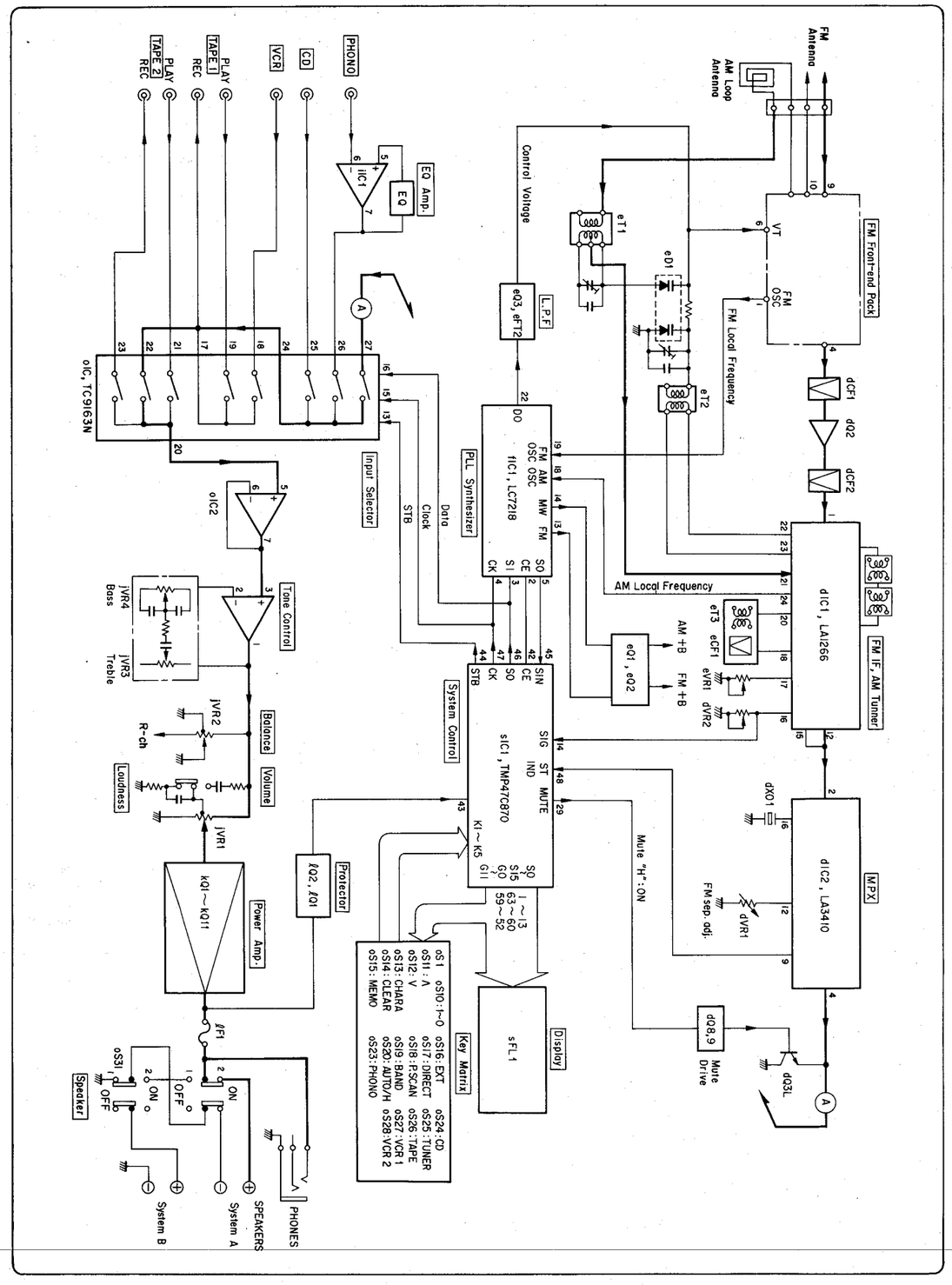


2. ACCESSORY LIST

Stock No.	Description
83041000	AM Loop Antenna
48489800	Antenna Plug (EU•ES•EG)
46051700	FM Antenna
84529800	AM Antenna Holder
84453900	RZ-3000/1000 Operating Instruction (*E•F•S)
84454000	RZ-3000/1000 Operating Instruction (*G•I•Sw)

***Note:**
E•F•S: **E**nglish•**F**rench and **S**panish Version
G•I•Sw: **G**erman•**I**talian and **Sw**edish Version

3. BLOCK DIAGRAM



4. ADJUSTMENT

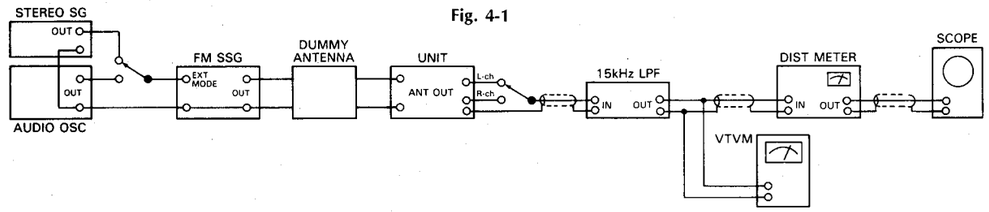
4-1. Bias Adjustment of Power Amp. (See Parts Laocation F-6007 on page 8 and F-6001 on page 7)

Note: 1. Master Volume ..... Minimum
2. Room Temperature ..... 18°C ~ 28°C (65°F ~ 83°F)
3. For this adjustment, run the unit for more than 5 minutes after the power is switched ON.
4. Before turning ON power switch, set kVR1 on F-6007 to center position.

STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	Bias Current Adj. L-CH	Between Point Ⓐ & Point Ⓑ <Between emitters of power transistor (kQ12 & kQ13), F-6001>, DC Volt Meter	kVR1, L-CH (F-6007)	DC 8.5 ~ 9.5mV	•This bias value is converted from current value to voltage by ohms law.
2.	Bias Current Adj. R-CH	Between Point Ⓒ & Point Ⓓ <Between emitters of power transistor (kQ12 & kQ13), F-6001>, DC Volt Meter	kVR1, R-CH (F-6007)	DC 8.5 ~ 9.5mV	

4-2. FM Adjustment (See Parts Location F-6001 on page 7)

Fig. 4-1



1) FM IF & Reference Frequency Adjustment

Note: 1. SELECTOR ..... FM
2. FM MUTING/MODE ..... OFF/MONO

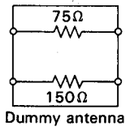
STEP	SUBJECT		FEED SIGNAL FROM	FEED SIGNAL TO	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	Reference Frequency Adj.		No Input (Tune to 98MHz)	—	Between Point Ⓔ (Pin 1 of Front-end, F-6001) & Ground, Freq. counter	fTC1 (F-6001)	108.7MHz ± 100Hz	
2.	Discriminator Coil Adj.	1	98MHz ANT Input 65dBf (59.8dB), 1kHz (100% MOD.), FM SSG	ANT Terminal 300Ω	Between Point Ⓕ & Point Ⓒ (Across dR17, F-6001), DC Volt Meter	dT1 (F-6001)	DC 0V ± 30mV	•Repeat procedures as stated in subject 1 & 2.
		2	Same as above	Same as above	REC OUT L or R-CH, Dist Meter & Scope	dT2 (F-6001)	Min. THD	

◆Technical Hint for FM Adjustment

There are two kind in indication of FM SSG output attenuator.
1. Attenuator with marking of 75Ω open ..... open indication type.
2. Attenuator with marking of 75Ω load or close ..... load or close indication type.

FM SG output level in this FM adjustment are described as open indication type.
To feed FM signal, a dummy antenna circuit as Fig. 3-1 must be connected between FM SG output and ANT terminal (300Ω) of the unit.

Fig. 4-2



- The following table shows relations among FM SG attenuator indication (dB), available power ratio (dBf) and antenna terminal voltage (dB/μV) in each indication type.

	FM SG Attenuator Indication	Available Power Ratio	Antenna Terminal Voltage
Open indication type	0 dB 66 dB	—0.8 dBf 65.2 dBf	—6 dB/μV 60 dB/μV
Load or close indication type	0 dB 60 dB	5.2 dBf 65.2 dBf	0 dB/μV 60 dB/μV

5. PARTS LIST OF BOARD

5-1. F-6001 Main Board <Stock No. 01118301 = XX·SS/01118302 = UL·CSA/01118305 = EU·ES/01118308 = EG>

Parts No.	Stock No.	Description
dZ1	49316500	FM Frontend Pack (XX·UL·CSA·SS)
	49316600	FM Frontend Pack (EU·ES·EG)
•Transistor		
dQ1	46834300	DTC144ES
dQ2	46393201	2SC2786
dQ3	46540801	2SC2878
	or 46604301	2SC3327
dQ4 ~ 7	46834300	DTC144ES
dQ8	46834200	DTA144ES
dQ9	46367101	2SC2603
	or 48058801	2SC1740S
dQ10, 11	46834300	DTC144ES
•IC		
dIC1	48715100	LA1266
dIC2	48491000	LA3410A
dXO1	83000200	Quartz Element
•Diode		
dD1 ~ 9	46464100	1SS133
dC4 ~ 8	48426900	22000pF 25V C.C.
dC9	48103300	0.68μF 50V E.B.
dC11	48662600	100pF 50V C.C.
dC12, 13	48102400	4.7μF 25V E.B.
dC18	48663100	270pF 50V C.C.
dC27	48426900	22000pF 25V C.C.
dCF1, 2	83000000	Ceramic Filter SFE10.7MS2 (XX·SS·UL·CSA)
	48064800	Ceramic Filter SFE10.7MS3GH (EU·ES·EG)
dL1	83043200	Inductor 100μH
dT1	83005900	FM IF Coil
dT2	83006000	FM IF Coil
dT3	46202400	CH Filter (EG)
⚠dR9	46227800	10Ω 1/2W N.I.R.
⚠dR19	46228200	22Ω 1/2W N.I.R.
dVR1	83007600	200kΩ S.V.R., FM Stereo Sep. Adj.
dVR2	83007600	200kΩ S.V.R., FM Muting Level Adj.
•Transistor		
eQ1, 2	46367001	2SA1115
	or 48058601	2SA933S
eQ3	46367101	2SC2603
	or 48058801	2SC1740S
•FET		
eFT2	46643501	2SK163-K2
	or 46643502	2SK163-L1
	or 46643601	2SK117-Y
	or 46643602	2SK117-GR
•Diode		
eD1	46146300	KV1236Z2 (Variable Capacitance)
eD2, 3	46464100	1SS133

Parts No.	Stock No.	Description
eC10 ~ 12	48426900	22000pF 25V C.C.
eC16	48426900	22000pF 25V C.C.
eC17	48666200	0.01μF 50V C.C.
eC20, 21	48426900	22000pF 25V C.C.
eC23	48663800	1000pF 50V C.C.
eC24	48103500	2.2μF 50V E.B.
eTC1, 2	46095700	30pF Trimmer Capacitor
	or 46162900	30 pF Trimmer Capacitor
eCF1	48865700	BFCFL-450 Ceramic Filter
eL1	83020300	39μH Coil
eT1	48528900	AM ANT Coil
eT2	83005700	AM OSC Coil
eT3	83013400	AM IF Coil
eVR1	83007500	100kΩ S.V.R., AM Auto Stop Level Adj.
•IC		
fIC1	49317500	LC7218
fXO1	83004400	Quartz Element
fTC1	46095700	30pF Trimmer Capacitor
	or 46162900	30pF Trimmer Capacitor
fL1	83042600	10μH Inductor
•IC		
iIC1	46078900	M5218L
iC2	48663000	220pF 50V C.C.
•Transistor		
kQ7	03067401	2SC1845
⚠kQ12	48577901	2SC3853
⚠kQ13	48577801	2SA1489
⚠kR34, 35	46542200	0.2Ω 2W Ce.R.
•Transistor		
lQ1	48863701	2SC2857
	or 48863901	2SC1473
lQ2	46367001	2SA1115
	or 48058601	2SA933S
•Zener Diode		
lDZ2	48551900	MTZ4.7CT-77
⚠lF1	83049000	Fuse 4A
•Transistor		
⚠mQ1	48581701	2SD438
⚠mQ2	03083901	2SD313HP
mQ3	46367101	2SC2603
	or 48058801	2SC1740S
⚠mQ4	48064001	2SA1284
⚠mQ5	48064001	2SA1284
•Diode		
⚠mD1	83024700	1N4003
⚠mD2	83024700	1N4003
⚠mD3	83024700	1N4003
⚠mD4	83024700	1N4003
⚠mD5	83002100	KBU4D

2) FM STEREO Adjustment

Note: 1. SELECTOR ..... FM 2. FM MUTING/MODE ..... AUTO

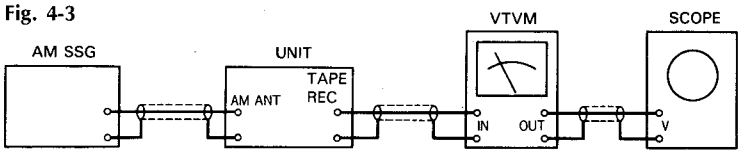
STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	Separation Adj.	98MHz ANT Input 65dBf (59.8dB), FM SSG, Pilot 19kHz (9% MOD.), R or L MODE 1kHz+Pilot (100% MOD.), STEREO SG.	ANT Terminal 300Ω	REC OUT L-CH, VTVM & SCOPE REC OUT R-CH, VTVM & SCOPE	dVR1 (F-6001)	Max. Separation	Confirm R→L-CH
2.	Muting Level Adj.	98MHz ANT Input 20dBf (14.8dB), FM SSG, Pilot 19kHz (9% MOD.), L or R MODE 1kHz+Pilot (100% MOD.), STEREO SG.	Same as above	Stereo indicator or OUTPUT (L-CH or R-CH), VTVM & SCOPE	dVR2 (F-6001)	Stereo indicator turns On or Output Signal comes out	

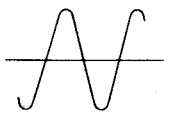
4-3. AM Adjustment (See Parts Location F-6001 on page 7)

1) AM IF Adjustment & Tuning Adjustment

Note: 1. SELECTOR ..... AM
2. Connect

Fig. 4-3



STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	IF Coil Adj.	1400kHz (9kHz step) or 1404kHz (10kHz step) ANT Input 55dB 400Hz (30% MOD.), AM SSG	ANT Terminal	REC OUT L or R-CH, VTVM & SCOPE	eT3 (F-6001)	Max, Waveform	
2.	531kHz (9kHz step) or 530kHz (10kHz step) Tuning Adj.	No Input	—	Between Point Ⓗ (collector of eQ3) & GND, DC Volt Meter	eT2 (F-6001)	DC 1V	•Repeat procedures as stated in subject 2 & 3.
3.	1602kHz (9kHz step) or 1710kHz (10kHz step) Tuning Adj.	No Input	—	Same as above	eTC2 (F-6001)	DC 8V (9kHz step) DC 10V (10kHz step)	
4.	603kHz (9kHz step) or 600kHz (10kHz step) RF Adj.	603kHz (or 600kHz) ANT Input 0dB 400Hz (30% MOD.), AM SSG	ANT Terminal	REC OUT L-CH or R-CH, VTVM & Scope	eT1 (F-6001)	Max. Output	
5.	1404kHz (9kHz step) or 1400kHz (10kHz step) RF Adj.	1400kHz (or 1400kHz) ANT Input 30dB 400Hz (30% MOD.), AM SSG	Same as above	Same as above	eTC1 (F-6001)	Max. Output	
6.	Auto Stop Level Adj.	999kHz (9kHz step) or 1000kHz (10kHz step) ANT Input 65dB 400Hz (30% MOD.), AM SSG	Same as above	Point Ⓚ (Pin 8 of dIC1), DC Volt Meter	eVR1 (F-6001)	Low Level (0V)	

* **Notice when the frequency-step of AM broadcasting is set to 9kHz or 10kHz by the AM channel (9kHz/10kHz) selection switch. Set the AM channel selection switch (oS30) on the F-6001 board in the following sequency.**

1. Pull out the power supply cord from the power outlet.
2. Remove the bonnet.
3. Short the Pin 64 of sIC1 (TMP47C870N) on the F-6003 board and ground for more than thirty seconds.
4. Set the AM channel selection switch (oS30) on the F-6001 board to proper position.

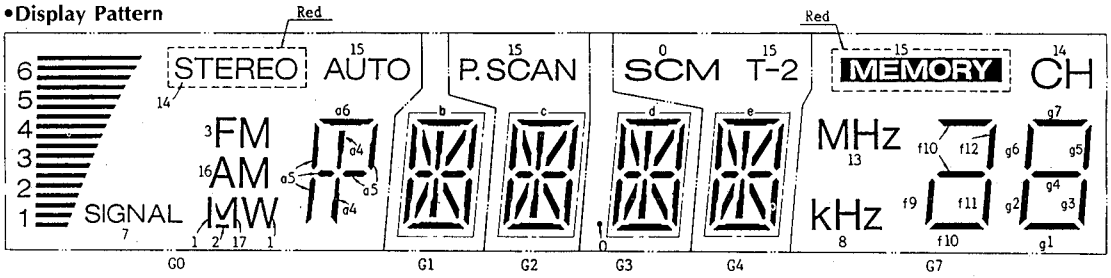
5-6. F-6007 Power Amp. Board <Stock No. 01119001 = XX·UL·CSA·SS/01119005 = EU·EG·ES>

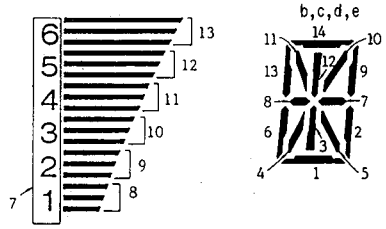
Parts No.	Stock No.	Description
•Transistor		
kQ1	46367001	2SA1115
	or 46392001	2SA1175
kQ2	48577701	2SA1349
kQ3	46728301	2SC2705
	or 48113001	2SC2229
kQ4	46728301	2SC2705
	or 48113001	2SC2229
kQ5	03064001	2SC1904
	or 46128101	2SC2911
kQ6	03007901	2SA899
	or 46128001	2SA1209
kQ8	48061801	2SC3244
kQ9	48064001	2SA1284
kQ10	48061801	2SC3244 (EU·ES·EG)
kQ11	48064001	2SA1284 (EU·ES·EG)

Parts No.	Stock No.	Description
⚠kR11	46230200	1kΩ 1/2W N.I.R.
⚠kR12	46229200	150Ω 1/2W N.I.R.
⚠kR16	46230200	1kΩ 1/2W N.I.R.
⚠kR19	46228500	39Ω 1/2W N.I.R.
⚠kR20	46229200	150Ω 1/2W N.I.R.
⚠kR21	46230200	1kΩ 1/2W N.I.R.
⚠kR23, 24	46228400	33Ω 1/2W N.I.R.
⚠kR29	46230200	1kΩ 1/2W N.I.R.
⚠kR30	46229100	120Ω 1/2W N.I.R.
⚠kR32, 33	46227400	4.7Ω 1/2W N.I.R.
•Diode		
kD1	46464100	1SS133
kVR1	48078600	1kΩ S.V.R., Bias Current Adj.

6. DISPLAY PATTERN AND PIN ASSINGMENT OF CP3023 FL DISPLAY

•Display Pattern





◆ Pin Assignment

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Assignment	F	P0	P16	P17	P1	P2	P3	P4	P5	P6	P7	P8	P9

Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	26
Assignment	P10	P11	P12	P13	P14	P15	G0	G1	G2	G3	G4	G7	F

Grid / Anode	G0	G1	G2	G3	G4	G7
P0	MW			.(dot)	SCM	
P1	LW, MW	b1	c1	d1	e1	g1
P2	LW	b2	c2	d2	e2	g2
P3	FM	b3	c3	d3	e3	g3
P4	a4	b4	c4	d4	e4	g4
P5	a5	b4	c4	d4	e4	g4
P6	a6	b4	c4	d4	e4	g4
P7	SIGNAL 123456	b7	c7	d7	e7	g7

Grid / Anode	G0	G1	G2	G3	G4	G7
P8	Sig. 1	b8	c8	d8	e8	kHz
P9	Sig. 2	b9	c9	d9	e9	f9
P10	Sig. 3	b10	c10	d10	e10	f10
P11	Sig. 4	b11	c11	d11	e11	f11
P12	Sig. 5	b12	c12	d12	e12	f12
P13	Sig. 6	b13	c13	d13	e13	MHz
P14	STEREO	b14	c14	d14	e14	CH
P15	AUTO		P.SCAN		T-2 (TAPE2)	MEMORY

<F-6001>

Parts No.	Stock No.	Description
•Zener Diode		
mDZ1	48552900	MTZ6.8AT-77
mDZ2	48555300	MTZ13CT-77
mDZ3	48555100	MTZ13AT-77
mDZ4	48552100	MTZ5.1BT-77
	or 48552200	MTZ5.1CT-77
mDZ5	48558000	MTZ30BT-77
	or 48558100	MTZ30CT-77
⚠mR1	46249700	220Ω 1/2W N.I.R.
⚠mR4	46623700	33Ω 2W N.I.R.
⚠mR100	46227400	4.7Ω 1/2W N.I.R.
⚠mR101	46227800	10Ω 1/2W N.I.R.
mC8, 9	08300400	3300μF 50V E.C.
mC10, 11	08680400	0.01μF 500V C.C.
•Transistor		
oQ1	46540801	2SC2878
	or 46604301	2SC3327
oQ2	46367101	2SC2603
	or 48058801	2SC1740S
oQ3	46834200	DTA144ES
•IC		
oIC1	49312200	TC9163N
oIC2	46147700	M5218L
oC1	48660200	47pF 50V C.C.
oC2	48659400	22pF 50V C.C.
oC3	48660200	47pF 50V C.C.
oC4	48659400	22pF 50V C.C.
oC5	48663000	220pF 50V C.C.
oS30	83045800	Slide SW., AM 9k/10k (XX•SS)
⚠pF1	83021600	Fuse 1.5A (XX•SS)
⚠	83021900	Fuse 3A (UL•CSA)
⚠	83024000	Fuse 3.15A (EU•ES•EG)
⚠pF2	83021600	Fuse 1.5A (XX•SS)
qZ11	48528400	2P Pin Jack Terminal, PHONO
qZ12	48528300	6P Pin Jack Terminal, TAPE-1•CD
qZ13	48528200	4P Pin Jack Terminal, TAPE-2
qZ14	48987400	2P Pin Jack Terminal, VCR/VDP
qZ10	49299700	4P Antenna Terminal (XX•UL•CSA•SS)
	49320400	2P Antenna Terminal (EU•ES•EG)
qZ16	46947500	8P Speaker Terminal

5-2. F-6002 SPEAKER IMPEDANCE Switch Board

Parts No.	Stock No.	Description
oS32	49338500	Side SW., SPEAKER IMPEDANCE
⚠pF3	83023500	Fuse 3A (ES)

5-3. F-6003 Tuner Control and Operating Switch Board <Stock No. 01118601>

Parts No.	Stock No.	Description
•Diode		
oD1 ~ 11	46464100	1SS133
oS1	83003000	Push SW., 1 (Preset)
oS2	83003000	Push SW., 2 (Preset)
oS3	83003000	Push SW., 3 (Preset)
oS4	83003000	Push SW., 4 (Preset)
oS5	83003000	Push SW., 5 (Preset)
oS6	83003000	Push SW., 6 (Preset)
oS7	83003000	Push SW., 7 (Preset)

<F-6003>

Parts No.	Stock No.	Description
oS8	83003000	Push SW., 8 (Preset)
oS9	83003000	Push SW., 9 (Preset)
oS10	83003000	Push SW., 0 (Preset)
oS11	83003000	Push SW., ∧ (TUNING)
oS12	83003000	Push SW., ∨ (TUNING)
oS13	83003000	Push SW., CHARACTER
oS14	83003000	Push SW., CLEAR
oS15	83003000	Push SW., MEMO
oS16	83003000	Push SW., ENTER
oS17	83003000	Push SW., F.DIRECT
oS18	83003000	Push SW., P.SCAN
oS19	83003000	Push SW., BAND
oS20	83003000	Push SW., AUTO
oS23	83003000	Push SW., PHONO
oS24	83003000	Push SW., CD
oS25	83003000	Push SW., TUNER
oS26	83003000	Push SW., TAPE-1
oS27	83003000	Push SW., TAPE-2
oS28	83003000	Push SW., VCR/VDP
•Transistor		
sQ1, 2	48223100	DTC114TS
sQ4 ~ 6	46719900	DTC124ES
sQ7	46367101	2SC2603
	or 48058801	2SC1740S
sQ8	48223100	DTC114TS
sQ9	46834300	DTC144ES
•IC		
sIC1	49317400	TMP47C870N
sXO1	48241600	Ceramic OSC Element
•Diode		
sD1 ~ 5	46464100	1SS133
sFL1	49317100	FL. Display Tube CP3023
sR10, 11	48773600	10kΩX8 A.R.
sC4	49299400	0.47μF 5.5V E.C.

5-4. F-6004 SPEAKERS Switch Board

Parts No.	Stock No.	Description
kL1	83020100	Inductor
⚠kR39, 40	46227800	10Ω 1/2W N.I.R.
⚠kR41	46229400	220Ω 1/2W N.I.R.
oS31	83045900	Push SW., SPEAKERS
qZ15	46579600	Jack, PHONES

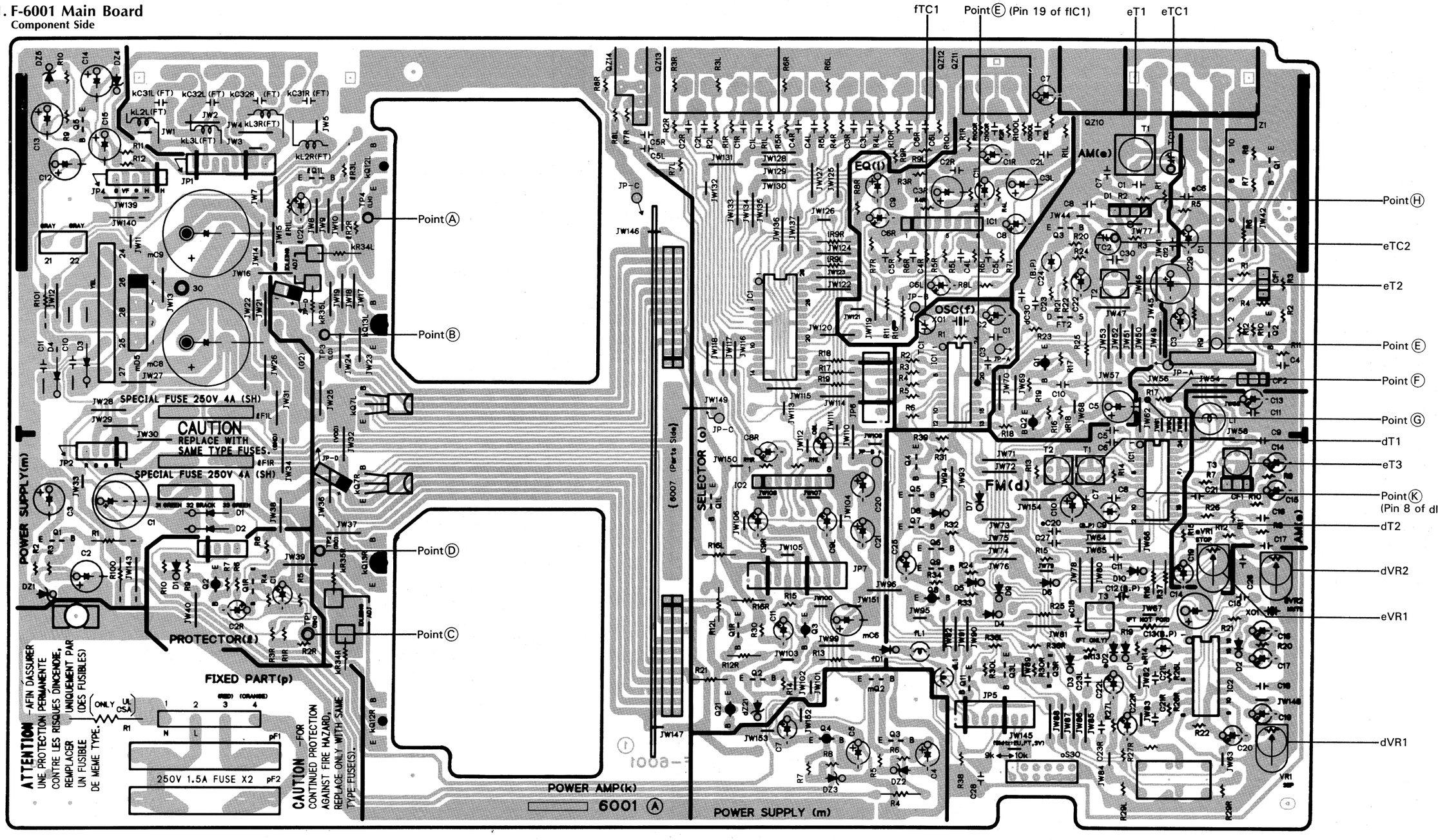
5-5. F-6006 Master and Tone Control Volume Board

Parts No.	Stock No.	Description
•IC		
jIC1	46673800	M5218P
jC4	48660200	47pF 50V C.C.
jC9	48663400	470pF 50V C.C.
⚠jR21	46229000	100Ω 1/2W N.I.R.
jVR1	49322100	150kΩ (B)x2 V.R., Master
jVR2	83013000	250kΩ V.R., BALANCE
jVR3	83012800	50kΩ (C) V.R., TREBLE
jVR4	83012800	50kΩ (C) V.R., BASS
jS1	83046700	Push SW., LOUDNESS

7. PARTS LOCATION ON BOARD

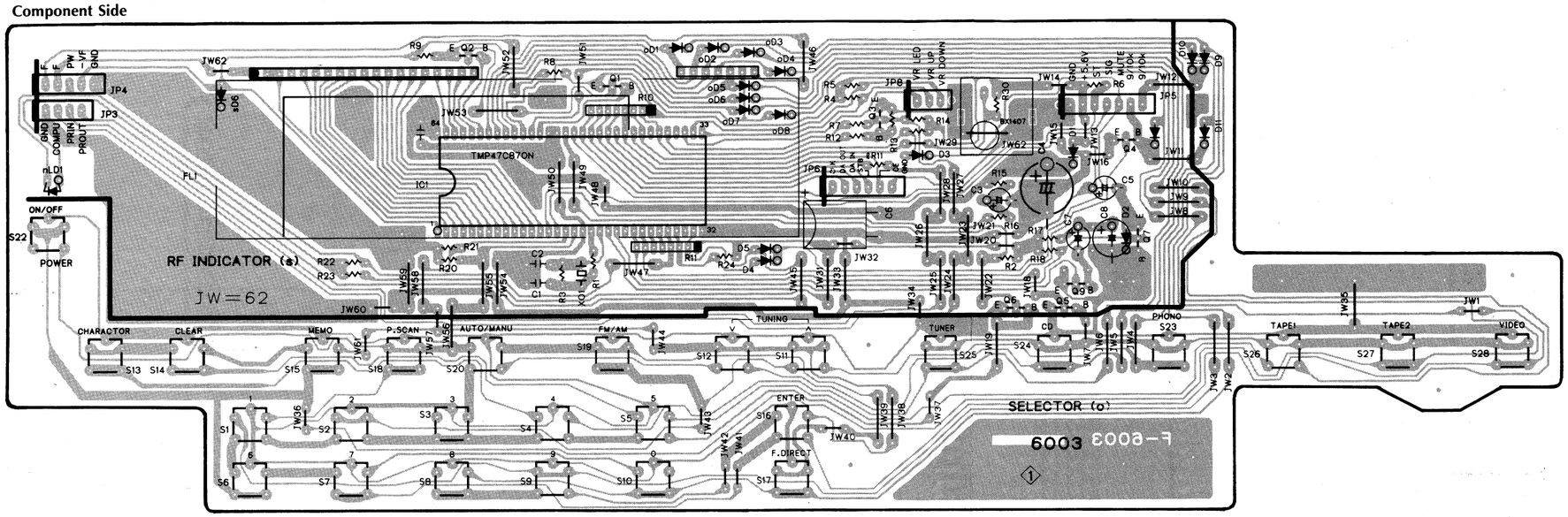
7-1. F-6001 Main Board

Component Side



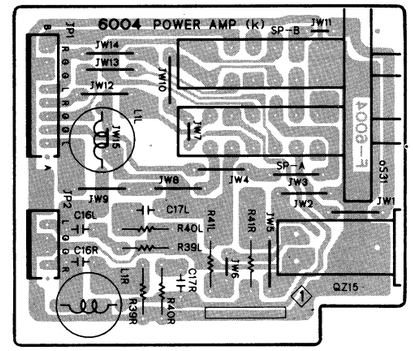
7-2. F-6003 Tuner Control and Display Board

Component Side



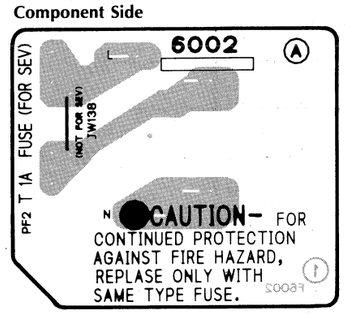
7-3. F-6004 SPEAKERS Switch Board

Component Side



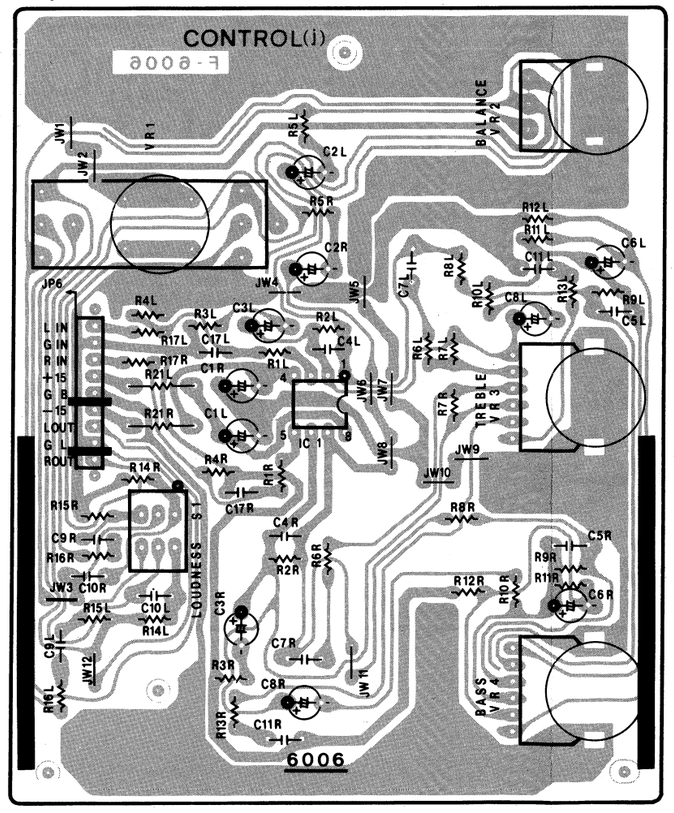
7-4. F-6002 SPEAKER IMPEDANCE Switch Board

Component Side


6002
PF2 T 1A FUSE (FOR SEV)
(NOT FOR SEV)
JW138
CAUTION- FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLASE ONLY WITH SAME TYPE FUSE.

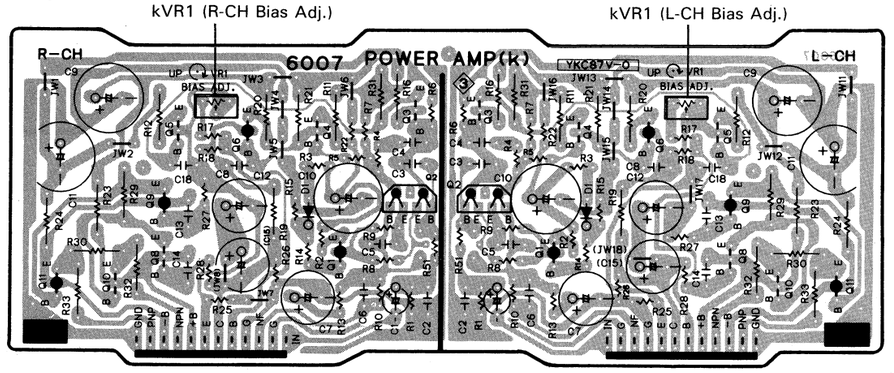
7-5. F-6006 Master and Tone Control Volume Board

Component Side



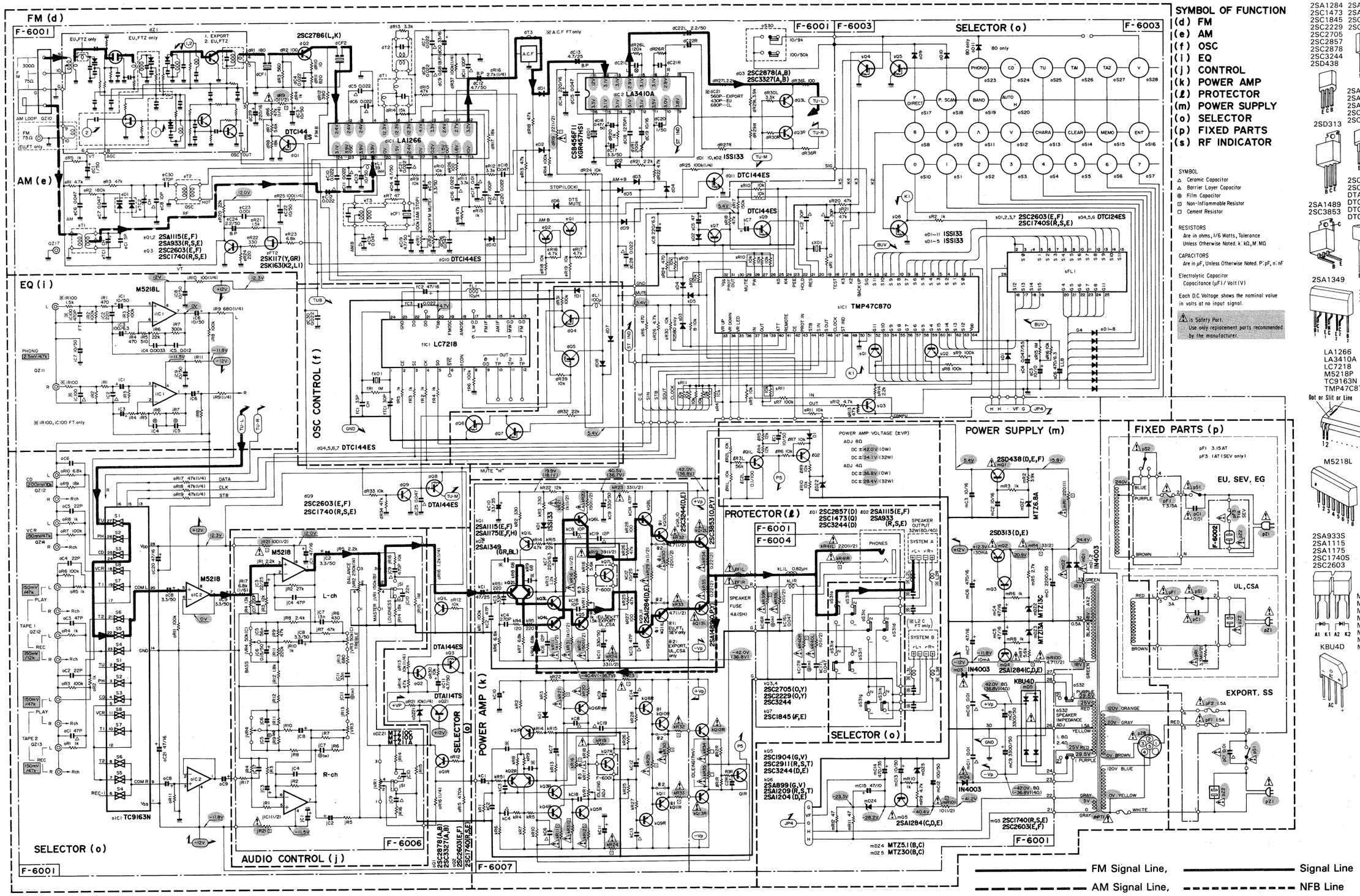
7-6. F-6007 Power Amp. Board

Component Side



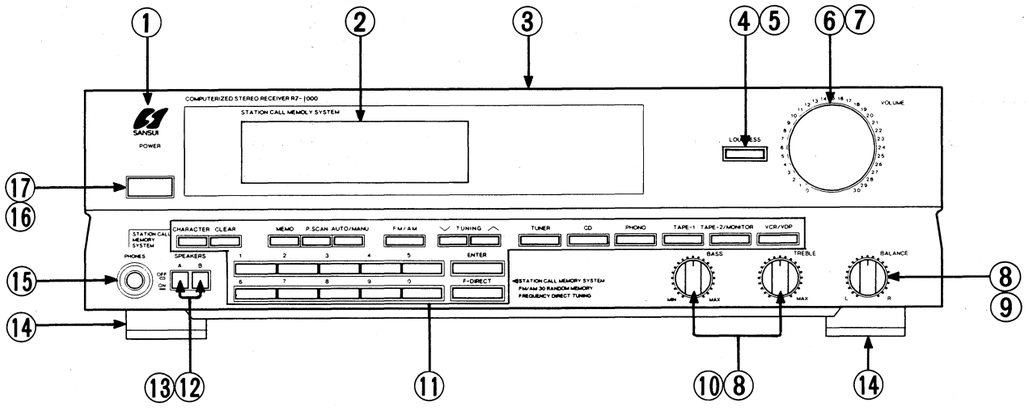
8. SCHEMATIC DIAGRAM

* Design and specifications subject to change without notice for improvement.
* La présention et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.

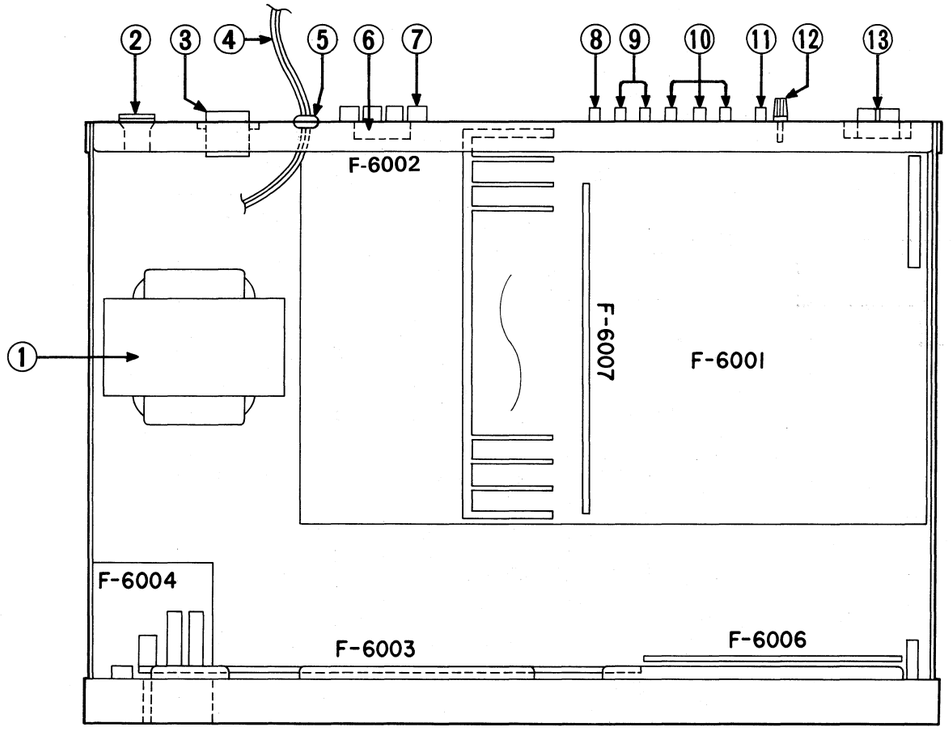


9. OTHER PARTS

•Front View



•Top View



Parts List <Front View>

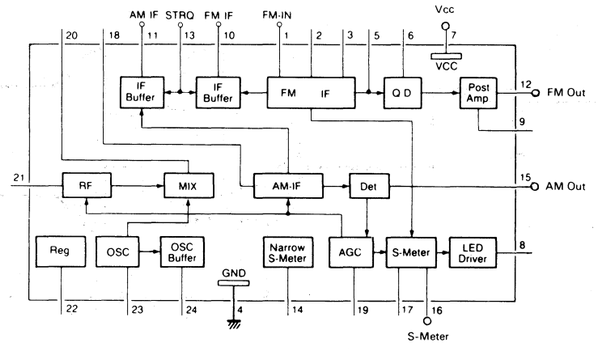
Parts No.	Stock No.	Description
1	37502601	Front Panel Ass'y
2	49317100	CP-3023 FL. Display Tube
3	84578500	Bonnet
4	84580300	Push Knob, LOUDNESS
5	83046700	Push SW., LOUDNESS
6	84586900	Knob, MASTER
7	49322100	150kΩ (B)x2V.R., MASTER
8	84580100	Knob, BALANCE•TREBLE•BASS
9	83013000	250kΩ V.R., BALANCE
10	83012800	50kΩ (C)x2 V.R., TREBLE•BASS
11	83003000	Push SW., Operation
12	84580000	Push Knob, SPEAKERS
13	83045900	Push SW., SPEAKERS
14	84526700	Leg
15	46579600	Jack, PHONES
16	84579700	Knob, POWER
⚠17	83049200	Push SW., POWER

Parts List <Top View>

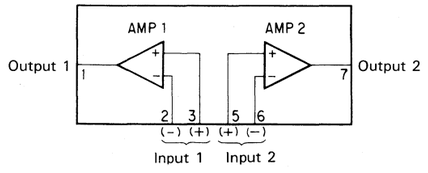
Parts No.	Stock No.	Description
⚠ 1	83046509	Power Transformer (XX•SS)
⚠	83046502	Power Transformer (UL•CSA)
⚠	83046505	Power Transformer (EU•EG•ES)
⚠ 2	83004100	AC Outlet (XX•SS)
⚠	83002200	AC Outlet (UL•CSA)
⚠	83002500	AC Outlet (EU•EG•ES)
⚠ 3	48175200	Voltage Selector (XX)
⚠	07204700	Slide SW., Voltage Selector (EU•EG•ES)
⚠ 4	83000400	Power Supply Cord (XX)
⚠	83034900	Power Supply Cord (SS)
⚠	83000500	Power Supply Cord (UL•CSA)
⚠	83000600	Power Supply Cord (EU•EG•ES)
⚠ 5	39106000	Strain Relief (XX)
⚠	48913500	Strain Relief (SS•EU•EG•ES)
⚠	39104900	Strain Relief (UL•CSA)
6	49338500	Slide SW., SPEAKER IMPEDANCE SELECTOR
7	46947500	8P Sepaker Terminal
8	48987400	2P Pin Jack Terminal, VCR/VDP
9	48528200	4P Pin Jack Terminal, TAPE-2
10	48528300	6P Pin Jack Terminal, TAPE-1•CD
11	48528400	2P Pin Jack Terminal, PHONO
12	84528300	Ground Terminal
13	49299700	4P Antenna Terminal (XX•UL•CSA•SS)
	49320400	2P Antenna Terminal (EU•ES•EG)

10. INTERIOR BLOCK DIAGRAM & TERMINAL FUNCTION OF IC

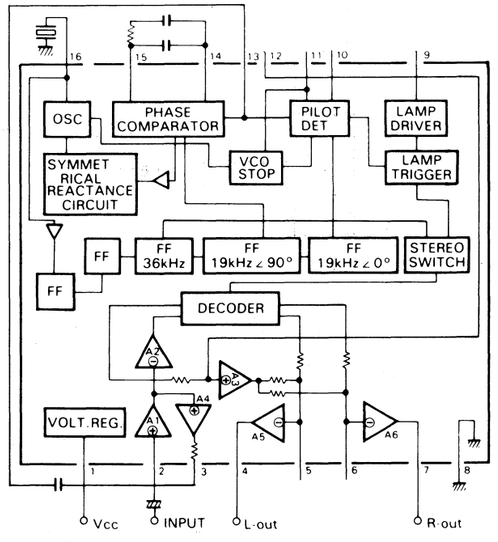
•LA 1266 (FM-IF, AM-RF•MIX•IF)



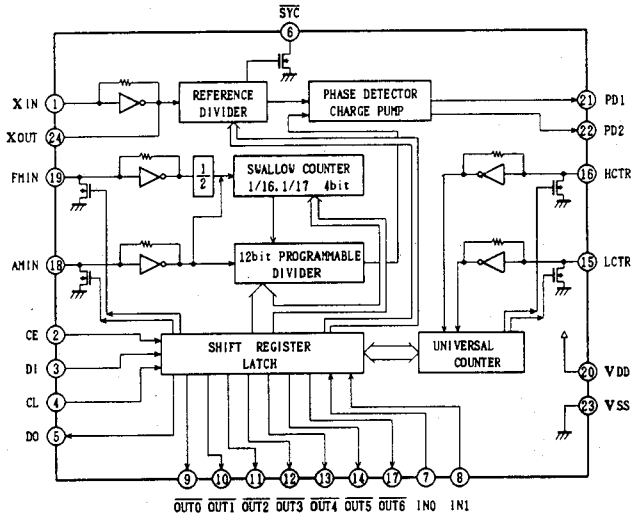
•M5218L, M5218P (Operational Amp.)



•LA3410 (MPX)



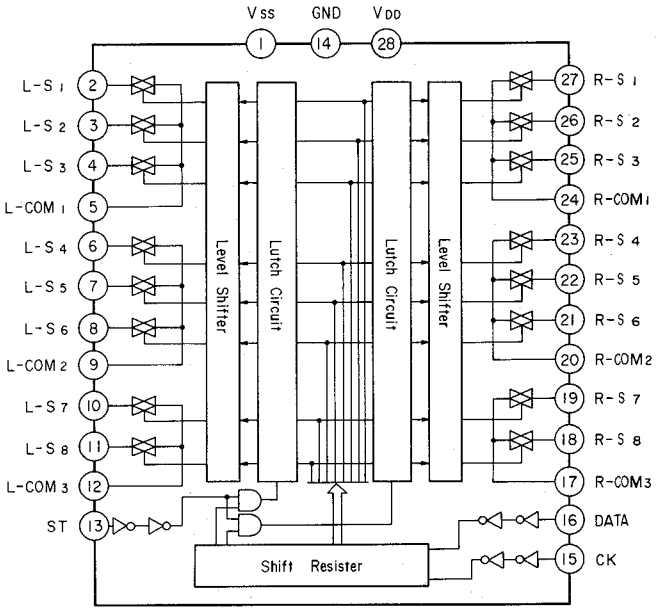
•LC7218 (PLL Synthesizer)

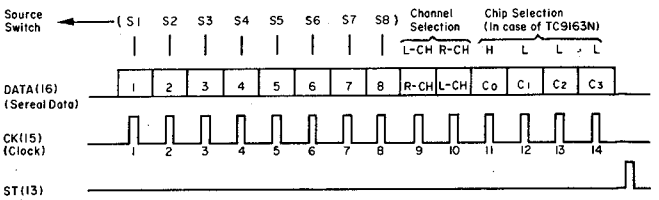


◆Terminal Function <LC7218>

Pin No.	Pin Name	I/O	Description
1, 24	XIN, XOUT	—	Terminals for connecting a oscillator of 7.2 MHz.
3 4 5	SI CK SO	I I O	Serial interfaces for SI (Serial data input), SO (Serial data output) and CK (Serial clock input) from/to the TMP47C870.
7	fCON	I	Terminal to input a signal for performing the automatic search stop. When this pin is HIGH, the automatic search stop.
8	LW ENA	I	MW/LW select signal input terminal. In LOW level, MW mode. In HIGH level, MW/LW mode.
9	TUNING	O	Manual/Auto tuning select signal output. In LOW level, manual tuning operation. In HIGH level, automatic tuning operation.
13	$\overline{FM}$	O	FM band switching signal output pin. In LOW level, FM band mode. In HIGH level, others mode.
14	$\overline{AM}$	O	AM band switching signal output pin. In LOW level, AM band mode. In HIGH level, others mode.
15	AMIF	I	Terminal to input AM IF signal.
16	FMIF	I	Terminal to input FM IF signal.
18	AMOSC	I	Terminal to input a signal from AM local OSC.
19	FM OSC	I	Terminal to input a signal from FM local OSC.
20	VDD	—	Positive supply voltage.
22	DO	O	Terminal to output signal from a phase comparator.
23	GND	—	Ground

•TC9163N (Analog Switch)



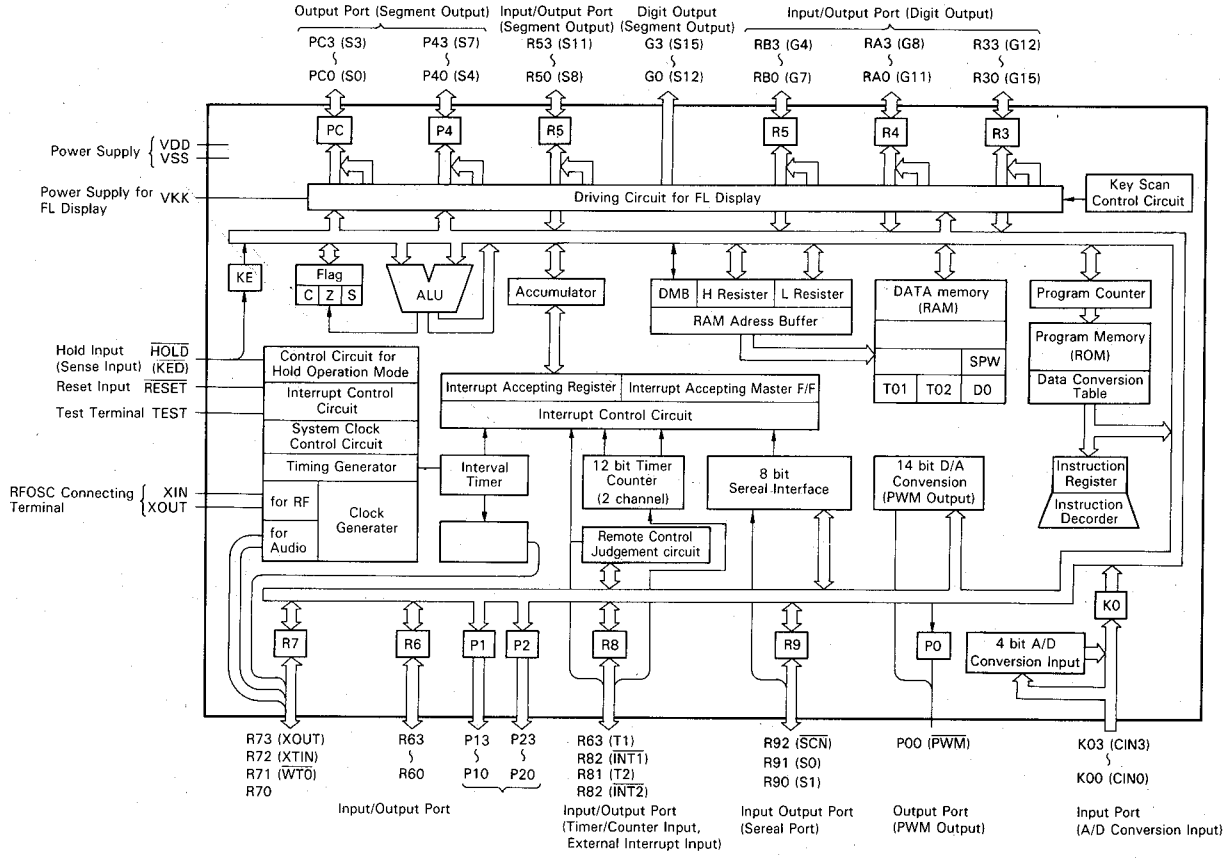


◆ST Terminal Function

* When data bit 1 is High level, source switch 1 is ON.
In the same manner, when data bit 2 (3~8) is High level, source switch 2 (3~8) is ON.

* Shift resister recieves 14 bit sereal datas, and their datas are sent to the lutch circuit by the ST signal.

•TMP47C870N (Tuner/Audio System Control)



Pin No.	Pin Name	I/O	Description
2~13 60~63	S0~S11 S15~S12	O	Terminals for outputting segment signals to FL display.
52~59	G11~G4	O	Terminals for outputting grid signals to FL display and key matrix return timing signals.
14	SIG	I	Terminal for inputting analog signal for signal indicator of FL display.

Input voltage	Signal indicator of FL display
more than 0.62V	Indicator (1) lighting
more than 0.94V	Indicator (1 and 2) lighting
more than 1.56V	Indicator (1~3) lighting
more than 2.19V	Indicator (1~4) lighting
more than 2.81V	Indicator (1~5) lighting
more than 3.12V	All indicator lighting

Pin No.	Pin Name	I/O	Description
15	BACK UP	I	Terminal to input buck-up signal.
16, 17 24, 25 49	K2, K3 K4, K5, K1	I	Terminals for inputting a key return signal from externally connected key matrix.
29 • 40	MUTE ATT	O	Terminals to output muting signal. These terminals are kept in "L" level in ordinary state, and in "H" level in muting.
31	PROT OUT	O	Terminal to output protecting signal. This terminal is kept in "L" level in ordinary state, and in "H" level in protecting.
43	PROT IN	O	Terminal to input protecting signal. This terminal is inputted in "L" level in ordinary state, and in "H" level in protecting.
44 45 46 47	STB SI SO CK	O I O O	Serial interfaces for STB (strobe pulse output), SO (serial data output), SI (serial data input) and CK (serial clock output).
48	ST	I	Terminal to input a signal for FM STEREO indicator of FL display. When this terminal is LOW, STEREO indicator of FL display is lighted.
50 51	FL DUTY1 FL DUTY2	I	Terminals are used to determine a brightness for FL display.

SANSUI

SANSUI ELECTRIC CO., LTD.: 14-1, Izumi 2-chome, Suginami-ku Tokyo 168 Japan
PHONE: (03) 324-8891/TELEX: 232-2076 (International Division)
SANSUI ELECTRONICS CORPORATION: 1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.
17150 South Margay Ave. Carson, California 90746 U.S.A.
3036 Koapaka Street. Honolulu, Hawaii 96819 U.S.A.
SANSUI ELECTRONICS G.M.B.H.: Paul Ehrlich Strasse 8, 6074 Rödermark 2, West Germany
山水電気株式会社 東京都杉並区和泉2-14-1(〒168)

(SM2-79) Printed in Japan (1988.06.M) <Stock No. 36539700>